

# Frequency Spectrum of Pbars from Stripline Sum

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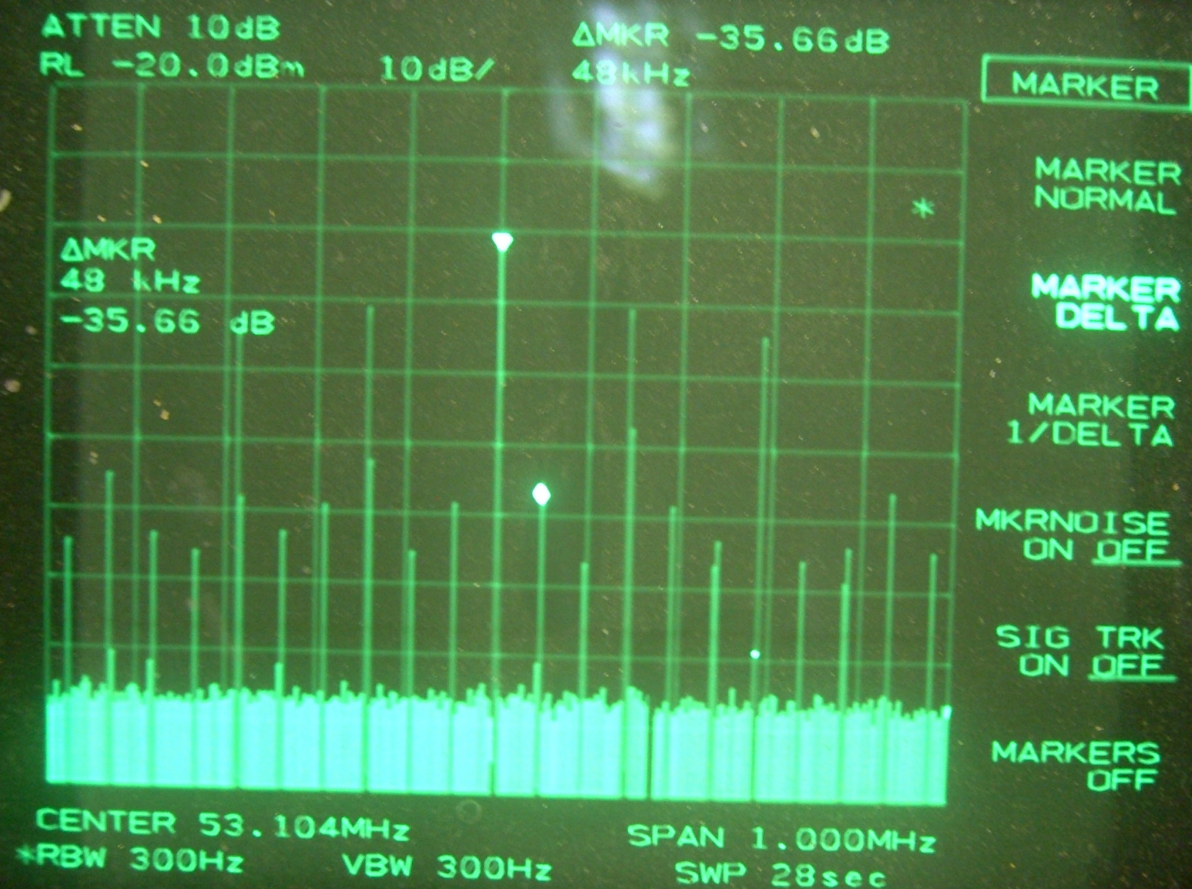
# Setup

- Spectrum analyzer connected to A+B downstream end of vert stripline at F0
  - 20dB pad added to input of analyzer.
- Data taken for store 8184 near the end of store around 1400 hrs.

# 1MHz Span

Centre freq =  
53.104 MHz

Markers at  
53.104MHz  
and 1<sup>st</sup>  
revolution  
harmonic



VOLUME

1ST LO  
OUTPUT

IF  
INPUT

CAL  
OUTPUT

PROBE  
POWER

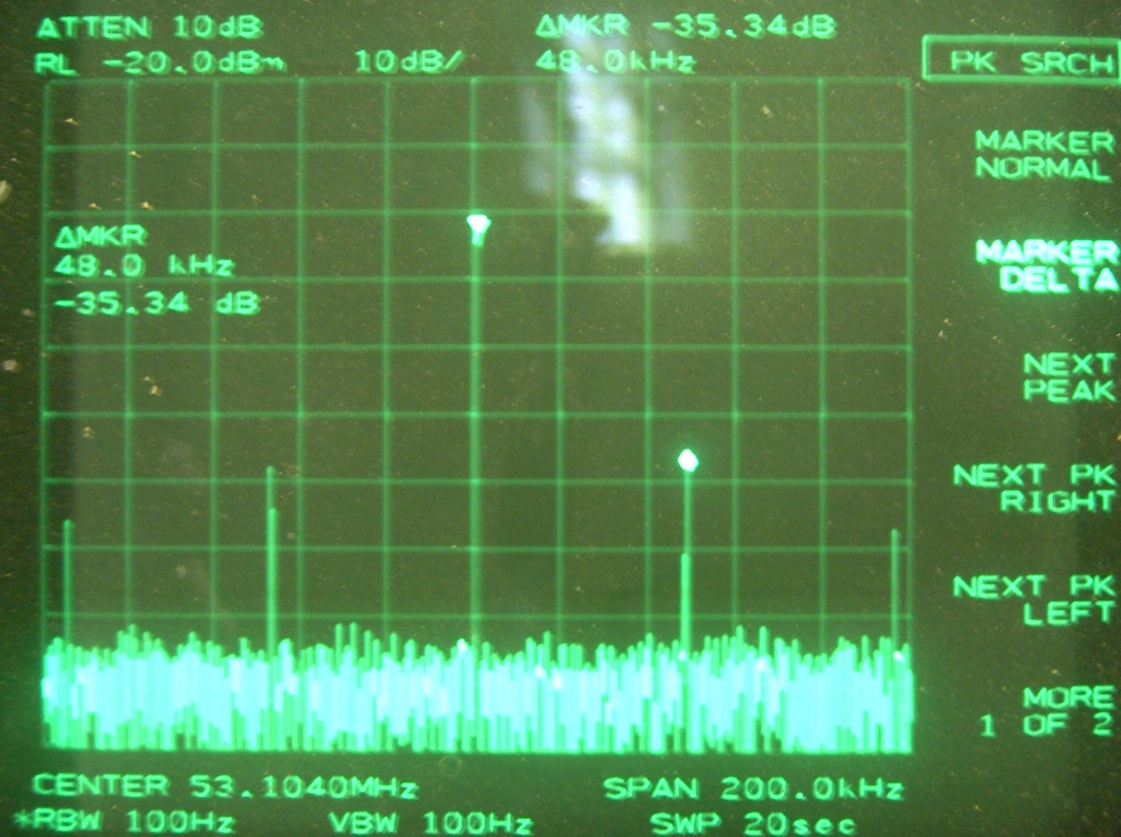
INPUT 50 Ω  
30 Hz - 6.5 GHz



# 200kHz Span

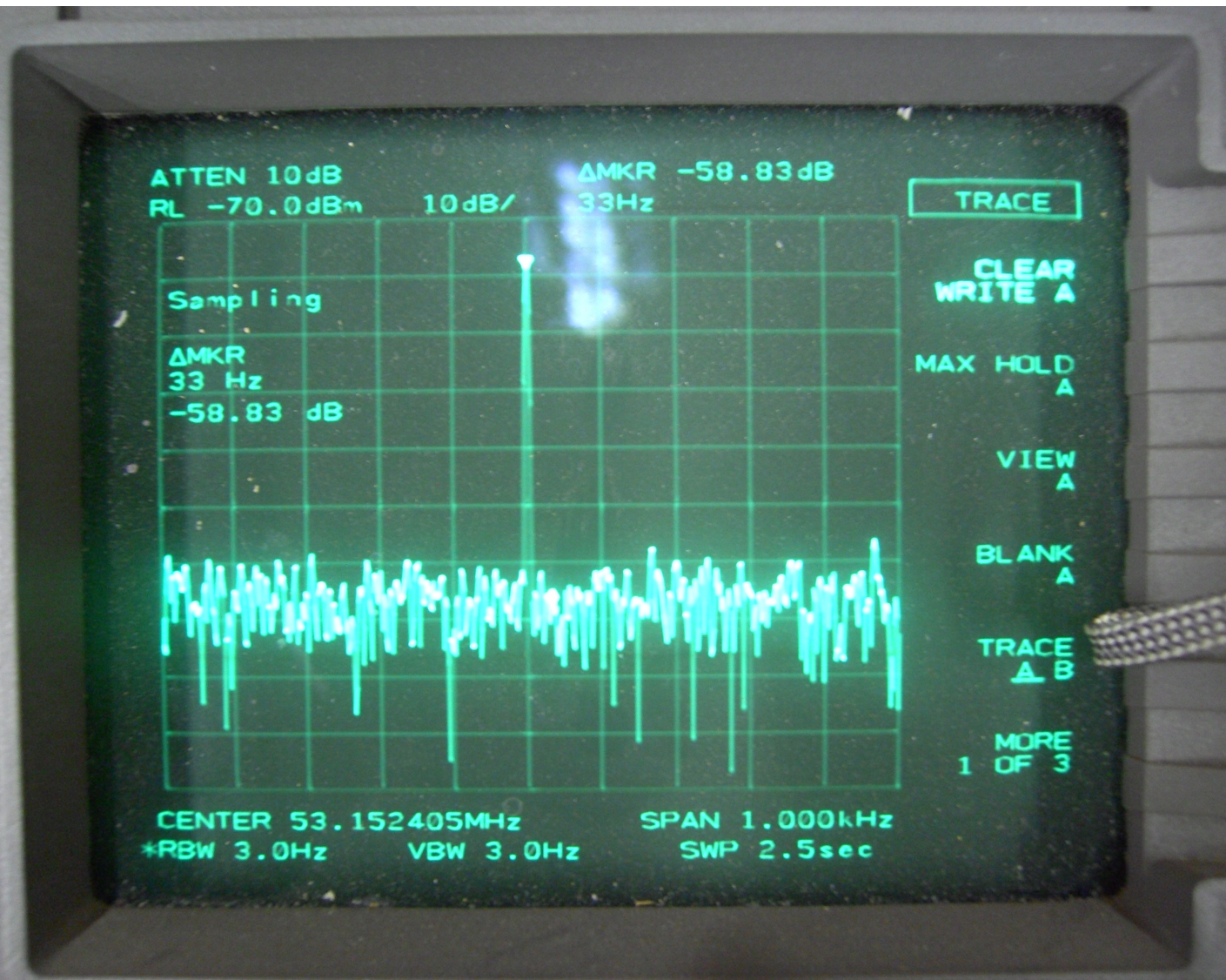
Centre  
frequency =  
53.104MHz

Markers at  
53.104MHz  
and 1<sup>st</sup>  
revolution  
harmonic





# Zoom into revolution harmonic



I cannot see the synchrotron line which is supposed to be about 33Hz from the 1<sup>st</sup> revolution harmonic.

# Required Dynamic Range

- From the previous pictures, the required dynamic range should be about  $(35+60 = 95)\text{dB}$  of dynamic range assuming that the synchrotron line will just pop above the noise floor.
- The required number of bits for the input ADC  $> 16$  bits ( $16 \times 6 = 96 \text{ dB}$ )